

REMARKS

The Office action of June 4, 2003 has been received and its contents carefully noted.

Claims 1-12 are pending in the application. Claims 1, 5, 7, and 9 have been amended.

Claims 1-12 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Nakajima (JP 012420074A). Also, Claims 1-12 stand rejected under 35 U.S.C. § 102(e) as being unpatentable over Nishihara (U.S. Patent No. 6,219,403). Applicants respectfully traverse these rejections, and request allowance thereof in the continuation prosecution application for the following reasons.

The Claims are Patentable Over the Cited References

Claims 1-12 are not anticipated by Nakajima

Claims 1-12 stand rejected under § 102(b) in view of Nakajima.

Applicants strongly contend that Nakajima fails to disclose the features recited in these claims as amended such as a fixed irradiation target imaging means for non-invasively taking images of an irradiation target region including an irradiation target, and wherein a position and direction measuring means measures positions and directions of a irradiation target positioning means, said irradiation target imaging means, and an irradiation means in a 3D coordinate system.

Nakajima does not disclose this patentably distinct feature of a fixed irradiation target imaging means for non-invasively taking images of an irradiation target region including an irradiation target. In direct contrast, Nakajima (as described in Kunieda) solely discloses a necessarily movable X-ray camera input device that moves along the x-axis to pick up updated images of the diseased region in the patient. Specifically, Nakajima disclosure describes "...values of the diseased part S of the patient in the initial position A of the X-ray tube and the position B after the parallel displacement are respectively shown by S1 and S2...the X-ray tube and the image intensifier are simultaneously moved in parallel with each other by the distance in the X-axis direction on the supporting frame rails..." (see Kunieda; col. 1, lines 63-66; col. 2, lines 11-14). Furthermore, Kunieda states "...when the three-dimensional coordinates are calculated, it is necessary to move the X-ray TV camera input device every time." (see Kunieda; col. 2, lines 54-56).

Thus, in direct contrast to the recited feature of a fixed irradiation target imaging means, the invention of Nakajima must use a movable X-ray TV camera input device to accurately compute the updated position of the diseased region within the patient. Therefore, it is clear that Nakajima does not disclose and strong teaches away from the recited feature making the claimed invention patentably distinct and non-obvious from this cited reference.

Claims 1-12 are not anticipated by Nishihara

Claims 1-12 stand rejected under § 102(e) in view of Nishihara. Applicants strongly contend that Nishihara fails to disclose the features recited in these claims as amended such as a fixed irradiation target imaging means for non-invasively taking images of an irradiation target region including an irradiation target, and wherein a position and direction measuring means measures positions and directions of a irradiation target positioning means, said irradiation target imaging means, and an irradiation means in a 3D coordinate_system.

Nishihara does not disclose this patentably distinct feature of a position and direction measuring means for measuring the position and directions of a irradiation target positioning means, an irradiation target imaging means, and an irradiation means in a 3D coordinate system. In direct contrast, Nishihara solely discloses a radiation therapy method to eliminate deterioration in precision of the therapy plan that makes absolutely no mention of a position and direction measuring means using a 3D coordinate system including a target positioning means, a target imaging means, and an irradiation means as recited. Nishihara only mentions obtaining 3-D data regarding the inside of the patient's body using a CT device. (see FIGs. 3A-3C; col. 2, lines 54-59). However, it is noted that obtaining 3D data regarding a patient's body is significantly distinct from the recited feature of a position and

direction measuring means measuring positions and directions of a irradiation target positioning means, said irradiation target imaging means, and an irradiation means in a 3D coordinate system.

Thus, in contrast Nishihara only develops 3D data for the patient's body and does not incorporate an irradiating means, an irradiation target imaging means, and a target positioning means into a 3D coordinate system as recited. Therefore, it is clear that Nishihara does not disclose and strong teaches away from the recited feature making the claimed invention patentably distinct and non-obvious from this cited reference.

Conclusion

In view of the amendments and remarks submitted above, it is respectfully submitted that all of the remaining claims are allowable and a Notice of Allowance is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayments to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Application No. 09/964,481

The Examiner is invited to contact the undersigned at (703) 205-8000 to discuss the application.

Respectfully submitted,

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